

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for monitoring a light path transporting an optical signal of a particular wavelength between a source optical node and a destination optical node in an Optical Communication Network comprising a plurality of optical nodes where at least two optical nodes are interconnected by optical supervisory channels, said optical communication network having an associated control network, the method comprising the steps of:

modulating ~~a wavelength~~ said optical signal with an optical signature detectable in the optical domain, the optical signature ~~defining~~ identifying said light path;

executing a first procedure for identifying a first sequence of optical nodes currently receiving said optical signature;

executing a second procedure for identifying a second sequence of optical nodes provisioned to form said light path between the source optical node and the destination optical node;

executing a third procedure based on a step of flooding of enquiry messages for identifying each optical node in said plurality of optical nodes that detects said optical signature; and

executing a fourth procedure for identifying each optical node from among said at least two optical nodes that detects said optical signature;

wherein said first procedure, second procedure, third procedure, and fourth procedure are initiated at a command-line interface of a selected start optical node determined to belong to said light path.

2. (Previously presented) The method of claim 1 wherein the step of executing said first procedure comprises the steps of:

constructing a current list of optical nodes comprising said first sequence of optical nodes;
and
displaying said list of optical nodes.

3. (Previously presented) The method of claim 2 wherein the step of constructing the current list of optical nodes comprises the steps of:

constructing a first list of optical nodes that are currently traversed in sequence by the light path from said selected start optical node to the source optical node; and
constructing a second list of optical nodes that are currently traversed in sequence by the light path from said selected start optical node to the destination optical node.

4. (Previously presented) The method of claim 3 wherein the step of constructing said first list comprises the step of identifying all optical nodes pre-provisioned to be on the light path that have detected and processed said optical signature.

5. (Previously presented) The method of claim 3 wherein the step of constructing said second list comprises the step of identifying all optical nodes pre-provisioned to be on the light path that have detected and processed said optical signature.

6. (Canceled)

7. (Currently amended) The method of claim 1 wherein said second procedure comprises the step[[s]] of:

constructing a reference list of optical nodes comprising said second sequence of optical nodes; ~~and~~
~~displaying said reference list of optical nodes.~~

8. (Previously presented) The method of claim 7 wherein the step of constructing said reference

list of nodes comprises the steps of:

constructing a third list of optical nodes that are provisioned to be on the light path from said selected start optical node to the source optical node; and

constructing a fourth list of optical nodes that are provisioned to be present on the light path from said selected start optical node to the destination optical node.

9. (Previously presented) The method of claim 8, wherein the step of constructing said third list comprises the step of identifying optical nodes that are provisioned to process said optical signature.

10. (Previously presented) The method of claim 8 wherein the step constructing said fourth list comprises the step of identifying optical nodes that are provisioned to process said optical signature.

11. (Canceled)

12. (Canceled)

13. (Currently amended) The method of claim ~~42~~ [1] wherein the step of flooding comprises the steps of:

retrieving a list of all optical nodes in said plurality of optical nodes from the Control Network ; and

sending messages to said all optical nodes requesting confirmation of detecting said optical signature.

14. (Previously presented) The method of claim 1 wherein said fourth procedure comprises the steps of:

constructing a specific list of optical nodes which detect said optical signature in response to a process of neighbour discovery; and

displaying said specific list of optical nodes.

15. (Previously presented) The method of claim 14 wherein the step of constructing said specific list of optical nodes comprises the step of:

sending a message to each neighbouring optical node discovered via topology information maintained by the Control Network said message requesting:

confirmation of detecting said optical signature; and

relaying said message to another optical node.

16. (Currently amended) A system for monitoring a light path transporting an optical signal of a particular wavelength between a source optical node and a destination optical node in an Optical Communication Network comprising a plurality of optical nodes where at least two optical nodes are interconnected by optical supervisory channels, said optical communication network having an associated control network, the system comprising:

means for modulating ~~a wavelength~~ said optical signal with an optical signature detectable in the optical domain, the optical signature ~~defining~~ identifying said light path;

a first means for identifying a first sequence of optical nodes currently receiving said optical signature;

a second means for identifying a second sequence of optical nodes provisioned to form said light path between the source optical node and the destination optical node;

a third means for identifying each optical node in said plurality of optical nodes that detects said optical signature based on disseminating enquiry messages; and

a fourth means for identifying each optical node from among said at least two optical nodes that detects said optical signature;-

wherein said first means, second means, third means, and fourth means are provided at a command-line interface of a start optical node determined to belong to said light path.

17. (Previously presented) The system of claim 16, wherein the first means comprises:

means for constructing a list of optical nodes comprising said first sequence of optical nodes; and

means for displaying said list of optical nodes.

18. (Previously presented) The system of claim 17, wherein the means for constructing the list of optical nodes comprises:

means for constructing a first list of optical nodes that are currently traversed in sequence by the light path from the start optical node to the source optical node; and

means for constructing a second list of optical nodes that are currently traversed in sequence by the light path from the start optical node to the destination optical node.

19. (Previously presented) The system of claim 18 wherein the means for constructing said first list comprises:

means for identifying each optical node that has processed said optical signature.

20. (Previously presented) The system of claim 18, wherein the step of constructing said second list comprises:

means for identifying each optical node that has processed said optical signature.

21. (Canceled)

22. (Currently amended) The system of claim 16 wherein the second means comprises:

means for constructing a list of optical nodes that are provisioned ~~with~~ to process said optical signature; and

means for displaying said lists of optical nodes.

23. (Currently amended) The system of claim 22 wherein the means for constructing a list of optical nodes ~~that are provisioned with said optical signature~~ comprises:

means for constructing a third list of optical nodes that are provisioned ~~with~~ to process said optical signature from the start optical node to the source optical node; and

means for constructing a fourth list of optical nodes that are provisioned ~~with~~ to process said optical signature from the start optical node to the destination optical node.

24. (Currently amended) The system of claim 23, wherein the means for constructing said third list comprises:

means for identifying optical nodes that are provisioned ~~with~~ to process said optical signature.

25. (Currently amended) The system of claim 23, wherein the means for constructing said fourth list comprises:

means for identifying optical nodes that are provisioned ~~with~~ to process said optical signature.

26. (Previously presented) The system of claim 16, wherein the third means comprises:

means for flooding enquiry messages into the optical communication network; and

means for displaying a list of optical nodes which detect said optical signature in response to said enquiry messages.

27. (Previously presented) The system of claim 26 wherein the means for flooding comprises:

means for retrieving a list of all optical nodes in the plurality of optical nodes from the Control Network; and

means for sending messages to said all the optical nodes requesting confirmation of detecting said optical signature.-

28. (Previously presented) The system of claim 16 wherein the fourth means comprises:

means for constructing a specific list of optical nodes which detect said optical signature in response to a process of neighbour discovery; and

means for displaying said specific list of optical nodes.

29. (Previously presented) The system of claim 28, wherein the means for constructing said specific list of optical nodes comprises:

means for sending a message to each neighbouring optical node discovered via the Control Network requesting:

confirmation of detecting said optical signature; and

relaying said message to another optical node.